

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for monitoring and controlling a line ~~(1)~~
manufacturing tobacco products ~~(2)~~, comprising:

a plurality of production devices and units connected by way of a common
interface network ~~(48)~~ to at least one of a respective master control unit and a ~~(82, 83)~~
~~and/or to visual display means (84), characterized in that it comprises:~~

an auxiliary inspection unit ~~(45)~~ associated with the manufacturing line ~~(1)~~, and
connected to the network, for receiving tobacco products from at least one of the
production devices and units as test samples, for verifying ~~(48)~~ and serving to verify at
least one characteristic of the tobacco products ~~(2)~~ taken as test samples and
transmitting, by which signals indicative of the at least one characteristic of the
tobacco products ~~(2)~~ are transmitted to the network ~~(48)~~;

a processing and control unit associated with each production device and unit,
each processing and control unit connected to the network for receiving the signals as
prompts for corrective action; the auxiliary inspection unit thereby forming a feedback
control loop with all of the processing and control units such that a corrective action
can be applied to each production device and unit on which the at least one
characteristic depends.

2. (Currently Amended) A system as in claim 1, wherein the auxiliary inspection
unit ~~(45)~~ comprises a detection apparatus ~~(68)~~ capable in real time of verifying the
characteristic of the product ~~(2)~~ and relaying a signal indicative of the characteristic to
at least one of the production devices or units.

3. (Currently Amended) A system as in claim 2, wherein the signal indicative of the characteristic is relayed by the auxiliary inspection unit (45) to the visual display means (84) as a source of information.

4. (Cancelled)

5. (Currently Amended) A system as in claim 1, wherein the auxiliary inspection unit (45) comprises a relative signal processing and routing unit (50) connected to the common interface network (48) and to the master control units (82, 83) of the manufacturing line (1).

6. (Currently Amended) A system as in claim 1, wherein the manufacturing line (1) comprises two or more machines, typically a cigarette maker (3) and a filter tip attachment machine (4).

7. (Currently Amended) A system as in claim 1, wherein the auxiliary inspection unit (45) comprises a transferring mechanism for transferring means (62) ~~by which to transfer the tobacco products (2), connected to the manufacturing line (1) by way of a sampling device (46) for sampling~~ serving to select sample products (2) for testing purposes.

8. (Currently Amended) A system as in claim 7, wherein the sampling device (46) is connected to anthe outfeed (39) of the filter tip attachment machine (4).

9. (Currently Amended) A system as in claim 8, wherein the sampling device (46) comprises a conveyor ~~having means (92) presenting~~ single pockets (94), each for containing ~~serving to contain~~ a tobacco product (2).

10. (Currently Amended) A system as in claim 19, wherein the sampling device (46) comprises a shifter mechanism ~~means (89)~~, interposed between an outfeed roller (47) of the filter tip attachment machine (4) and the ~~pocket conveyor means (92)~~, and movable ~~capable of movement~~ between a first position and a second position in which a feed channel (90) directing products onto the conveyor ~~means (92)~~ is opened and closed, respectively.

11. (Currently Amended) A system as in claim 10, wherein the sampling device (46) comprises a conveying take-up roller (86) operating substantially tangential to the outfeed roller (47), by which products are fed to the shifter mechanism ~~means (89)~~.

12. (Currently Amended) A system as in claim 11, wherein the sampling device (46) comprises a collection tray (93) into which tobacco products (2) are directed by the shifter mechanism ~~means (89)~~ when in the closed position.

13. (Currently Amended) A system as in claim 19, wherein the conveyor follows~~means (92)~~ follow a path (P1)-of which at least one leg (98, 99, 102)-extends substantially transverse to a vertical bulkhead (A)-of the filter tip attachment machine (4).

14. (Currently Amended) A system as in claim 10, wherein the feed channel (90) includes at least one end portion presenting a profile of "S" outline.

15. (Currently Amended) A system as in claim 10, wherein the conveyor comprises~~means (92)~~ comprise a belt conveyor looped around return pulleys (95, 96) and including an active branch of which the function is to transfer the tobacco products (2)-from the outfeed (39)-of the filter tip attachment machine (4)-to the transfer mechanism~~means (62)~~.

16. (Currently Amended) A system as in claim 12, wherein the tray (93)-collecting the tobacco products (2)-is movable~~capable of movement~~ together with the shifter mechanism~~means (89)~~ between a receiving position corresponding to the closed position of the shifter mechanism~~means (8)~~, in which the tobacco products (2)-are collected, and an idle position coinciding with a position in which the shifter mechanism is ~~means (89) are~~ placed to direct the tobacco products (2)-onto the conveyor~~(92)~~.

17. (Currently Amended) A system as in claim 15, wherein the transfer ~~mechanism~~means (62) of the auxiliary inspection unit comprises a receiving mechanism (45) ~~comprise means (56)~~ by which single tobacco products (2) are received from the sampling device (46) and a feed mechanism~~means (64)~~ by which the same single products (2) are supplied to the detection apparatus ~~(68)~~.

18. (Currently Amended) A system as in claim 17, wherein the detection apparatus ~~(68)~~ comprises a unit ~~(66)~~ by which the single tobacco products (2) are retained and transferred, and also a sensing and inspection system~~means (67)~~.

19. (Currently Amended) A system as in claim 18, wherein the retaining and transfer unit ~~(66)~~ comprises a support member ~~(69)~~ capable of movement back and forth along a predetermined path (P) between two limit positions of which one coincides with the outlet of the feed mechanism~~means (64)~~, where a single tobacco product (2) is picked up, and the other coincides with the sensing and inspection system~~means (67)~~.

20. (Currently Amended) A system as in claim 19, wherein the support member (69) is pivotable about an axis (O) parallel to the predetermined path (P) between two limit positions.

21. (Currently Amended) A system as in claim 18, wherein the retaining and transfer unit ~~(66)~~ comprises a rolling mechanism for rolling~~means (71)~~ by which to roll the tobacco products (2).

22. (Currently Amended) A system as in claim 21, wherein the rolling mechanism ~~comprises means (71)~~ comprise a pair of rollers (72) placed orthogonally to the predetermined path ~~(P)~~, rotatable about parallel axes in the same direction and affording a seat (73) such as will accommodate a single tobacco product ~~(2)~~.

23. (Currently Amended) A system as in claim 19, wherein the sensing and inspection system comprises an ~~means (67)~~ ~~comprise optical system means (74)~~ by which to inspect an ~~the~~ entire outer surface of the single tobacco product ~~(2)~~.

24. (Currently Amended) A system as in claim 19, wherein the sensing and inspection system comprises ~~means (67)~~ ~~comprise~~ at least one optical sensor (75) serving to inspect an end portion of the single tobacco product ~~(2)~~.

25. (Currently Amended) A system as in claim 23, wherein the optical system ~~comprises means (74)~~ ~~comprise~~ a first television camera (76) equipped with a relative optical assembly, extending along the rollers (72) and serving to inspect the entire outer surface of the single tobacco product ~~(2)~~, also a second television camera (77) equipped with a relative optical assembly, capable of stepping motion along the rollers (72) and designed to inspect predetermined portions of the outer surface of the single tobacco product ~~(2)~~.

26. (Currently Amended) A system as in claim 21, wherein the retaining and transfer unit ~~(66)~~ of the auxiliary inspection unit ~~(45)~~ is connected in parallel to the manufacturing line ~~(1)~~.

27. (Currently Amended) A system as in claim 17, wherein the receiving mechanism comprises means by which single tobacco products (2) are received from the sampling device (46) comprise a first arm (56) carried by a slide (58) capable of translational movement between a position coinciding with the outfeed of the sampling device (46) and a position of release to a second arm movable in a rotary manner (64) ~~capable of rotary movement in such a way as to~~ direct the single tobacco products (2) along a vertical channel (64) connecting at the outfeed end with the retaining and transfer unit ~~(66)~~.

28. (New) A system for monitoring and controlling a line manufacturing tobacco products, comprising:

a plurality of production devices and units connected by a common interface network to at least one of a respective master control unit and a visual display;

an auxiliary inspection unit associated with the manufacturing line and connected to the network, for receiving tobacco products from at least one of the production devices and units as test samples, for verifying at least one characteristic of the tobacco products taken as test samples and transmitting signals indicative of the at least one characteristic to the network;

wherein the auxiliary inspection unit comprises a transferring mechanism for transferring the tobacco products, connected to the manufacturing line by a sampling device for sampling products for testing purposes;

wherein the sampling device comprises a conveyor having single pockets, each for containing a tobacco product;

wherein the sampling device comprises a shifter mechanism, interposed between an outfeed roller of the filter tip attachment machine and the conveyor, and movable between a first position and a second position in which a feed channel directing products onto the conveyor is opened and closed, respectively.